will not preclude the Commission from authorizing a new Little LEO system using the 401 MHz band for downlinks. Assigning the additional spectrum to ORBCOMM will, however, permit ORBCOMM to compete more effectively against the foreign-licensed Little LEO systems that have already been authorized, thereby helping to maintain the U.S. leadership of this segment of the satellite industry.

IV. The Commission Should Reject Leo One's Belated Challenge to ORBCOMM's Pending Modification Request Reflecting its Re-coordination with NOAA and Coordination with Foreign Satellite Systems

In its initial comments in this proceeding, Leo One also complained about a pending modification request of ORBCOMM that makes changes to its specific frequency plan in the 137-138 MHz band to accommodate a re-coordination with NOAA. That modification request also reflects changes necessary to coordinate with foreign-licensed MetSats operating in the 137-138 MHz band, as well as ORBCOMM's intent to substitute more efficient 9.6 kbps subscriber downlinks in its satellite system.[56/] Indeed, since filing its initial application in February 1990, ORBCOMM has continuously attempted to incorporate greater efficiency into its system design. Under the pending modification request, ORBCOMM will use 280 kHz of downlink spectrum for its system, down from the 320 kHz of downlink spectrum authorized by the Commission (and reduced significantly

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[56/] This re-coordination with NOAA is referenced in the NPRM at ¶ 53.

(over 24%) from the 370 kHz of bandwidth requested initially by ORBCOMM in its original February, 1990 application).

Leo One asserts that ORBCOMM and/or the Commission is attempting to address this modification request without notice and comment.[57/] In fact, the Commission has previously placed ORBCOMM's modification request on Public Notice, and Leo One availed itself of the opportunity to comment. As ORBCOMM demonstrated in its reply, Leo One's petition to deny (as well as the other petitions) failed to raise any valid grounds for denying ORBCOMM's application.[58/] In addition to being an untimely attack on that modification request, Leo One's latest challenge lacks merit, just like its predecessors.

As a matter of policy, a satellite system operator must be able to modify its operations in response to a coordination to be able to continue to provide service. The Commission has previously recognized the need for satellite system operators to retain spectrum flexibility to accommodate coordinations with other satellite systems.[59/] Indeed, Leo One will benefit from

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[57/] Leo One Comments at p. 48.

[58/] See generally, ORBCOMM Consolidated Reply, filed January 11, 1996, at pp. 2-8.

[59/] See, e.g., Establishing Rules and Policies for the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-Band, IB Docket No. 96-132, released June 18, 1996 at ¶¶ 13-14, where the Commission reserved spectrum for AMSC to provide international coordination flexibility, observing "the public interest requires that a Commission license carry with it some reasonable expectation that it will permit the holder to implement its system. Otherwise applicants and licensees -- as well as their investors and potential customers -- may be unwilling to commit the significant resources necessary to implement proposed systems, and this will have a chilling effect on the introduction of new services to the public."

this policy if it becomes a Little LEO licensee, insofar as it too will need to retain some flexibility in its system design as it coordinates with other systems.

Leo One's challenge to the modification request also contains a number of technical errors. Leo One suggests, with no justification, that the ORBCOMM emissions are spectrally inefficient and that "Orbcomm could incorporate filters into its satellite design as a means to protect NOAA operations."[60/] In fact, ORBCOMM's signals are extremely efficient as demonstrated by ORBCOMM's own channelization plan, which places channels immediately adjacent to each other. ORBCOMM uses Symmetric Differential Phase Shift Keying (SDPSK), raised cosine pulse filtering and digital spectral filtering to limit spectral occupancy. If ORBCOMM were spectrally inefficient, it would not be able to operate simultaneously on adjacent channels.

Additional filtering on the ORBCOMM satellite will not reduce the interference problem with respect to NOAA's LRPT receivers because ORBCOMM's out-of-band emissions are already well contained. The projected interference in the LRPT receiver is due to in-band emissions of the ORBCOMM satellite coupled with the out-of-band response of the LRPT receiver filter. ORBCOMM is taking part in on-going discussions and analyses with NOAA to address this situation, but currently there is no resolution of the problem.

Leo One also argues that ORBCOMM is claiming 20 kHz guard bands for the ORBCOMM channels that are migrated to NOAA's

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[60/] Leo One Comments at n. 66.

APT bands.[61] ORBCOMM is not claiming a need for such 20 kHz guard bands because ORBCOMM is not requesting the APT channels.[62] Rather, ORBCOMM has requested the Beacon (TIP) channels. These channels are 34 kHz wide and provide a better fit to the ORBCOMM signals.

The NOAA Beacon at 137.35 MHz is separated from each of the adjacent METEOR-2 bands by 9 kHz on each side, so that the full bandwidth between the Meteor-2 signals is 50 kHz. ORBCOMM's coordination with the Meteor-2 system has not been carried out yet, but it is likely that Meteor-2 will, because of its receiver filter, require a guard band as do the APT receivers. Such a guard band would be required whichever Little Leo system uses the band.

The NOAA Beacon at 137.77 is situated between two ORBCOMM channels (S9 and S10). The bandwidth between the signals is 62 kHz. The new ORBCOMM channel could be immediately adjacent to one of these existing channels, leaving 37 kHz of spectrum available. Alternatively, both ORBCOMM channels could be migrated to the 137.77 MHz Beacon band.

The requirement to develop the MSS NVNG service around the existing MetSat system bands has necessitated channelization in the 137-138 MHz band that will be less than optimum when the

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[61] Leo One Comments, Appendix F at Section 1.3.

[62] GE/Starsys' comments in this proceeding similarly reflect this mistake (that also appeared in the NPRM) as to which channels ORBCOMM and NOAA have proposed in their re-coordination. GE/Starsys Comments at p. 19. ORBCOMM is aware of the relative impact on GE/Starsys of other system's operations close to the center frequency of GE/Starsys' spread spectrum channels.

MetSats eventually vacate the band, leaving numerous small frequency bands, such as the 9 kHz "remnants" discussed above. ORBCOMM believes it would be most useful for operators to be able to adjust their channel frequencies slightly in the future so as to eliminate these band fragments and thereby use the band more efficiently when the entire band becomes available. Such an approach would permit the aggregation of numerous small frequency bands and could salvage as much as 50 kHz of spectrum that might otherwise be unusable.

As these anticipated modifications demonstrate, Leo One must recognize the need to preserve flexibility by Little LEO satellite system operators so as to be able to address changing needs resulting from coordinations and evolving usage by other systems. Leo One's cavalier call for denial of ORBCOMM's modification request would repudiate such flexibility, and therefore must be rejected.

V. The Commission Should Reject the Requests for Special Treatment Submitted by Satellife and the Land Mobile Interests

Satellife submitted initial comments seeking a Little LEO set aside for humanitarian services. To the extent that Satellife is requesting that U.S.-licensed Little LEO satellite systems reserve a portion of their capacity (for free or "at cost") for such purposes, ORBCOMM urges the Commission to reject Satellife's proposal. ORBCOMM believes Satellife provides a useful service and applauds its success. However, Satellife's request that it be reserved Little LEO capacity should not be

granted. Congress has not granted the Commission authority to mandate a specific set-aside that reserves spectrum for Satellife and others, and there is no logical place to limit the Commission if it endeavored to reserve capacity for other noble purposes.[63]

Satellife's proposed set-aside is unlike the reservation of DBS capacity it cites as precedent for its proposal. In that situation, Congress explicitly, and in detail, directed the Commission to reserve a specific percentage of channel capacity for non-commercial, educational programming.[64] No such statutory set-aside requirement exists in this instance. As a result, the Commission should not create such an obligation or infer authority to do so. Where Congress intends such a result, it has provided for it.[65] For example, the 1996 Telecommunications Act requires telecommunications carriers to provide service to public or nonprofit health care providers serving rural areas, at rates reasonably comparable to rates in urban areas. Congress, however, has not imposed any statutory obligations on Little LEO operators to reserve capacity for Satellife or any other group and as a result, the Commission should not impose such requirements under its general powers to advance the public interest.

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[63] Nor is it clear that such a mandated set-aside is necessary. VITA, by making arrangements with a commercial Little LEO system, has arranged to obtain capacity at little or no cost to itself.

[64] 47 U.S.C. § 335(b)(1).

[65] Satellife's reliance on the Commission's general powers could allow the Commission to require satellite system operators (or any other licensee) to support health care, education, scientific research, political discourse or any number of other worthy causes.

The Commission should also reject the self-serving pleas of the land mobile interests that filed in response to the NPRM. All parties that comment on the Little LEO use of the 459.000 MHz band,[66] which is included in the spectrum allocated to Little LEOs at WRC-95, mistakenly refer to reallocation of this spectrum band exclusively to Little LEO systems. The Commission, however, does not propose that current users be displaced, nor have the Little LEO advocates sought such displacement. Rather, the Little LEO systems have consistently proposed to share this spectrum without "constraining the development and use of fixed, mobile and space operations" of both present and future users.[67] Given the current levels of usage, more than adequate satellite technological expertise exists to share this spectrum among current users and Little LEO licensees on a non-interference basis to facilitate development of Little LEO systems.

These land mobile commenters should also be aware that although they have licenses to operate within this band, this does not grant them an exclusive, perpetual right to do so. The Communications Act makes it clear that there is no right to

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[66] The Industrial Telecommunications Association (ITA), American Petroleum Institute (API), and the Association of American Railroads (AAR), which represent private land mobile radio service users in the petroleum and railroad industries are the primary commenters. U.S. Oil and Refining Company, Cook Inlet Spill Prevention and Response, Inc., and the Clean Channel Association have also filed short letters.

[67] International Radio Regulation 608A. As API and ITA recognize, the Final Acts of WRC-95 provided that satellite allocations in the 459-460 MHz band be on such a basis. See ITA comments at pp. 5-6; API Comments at p. 12.

permanent use of the spectrum.[68] ITA and API, however, want existing users to retain sole use of this spectrum[69] although they both recognize that full-time, full-use of this spectrum is not required for its current use. As the U.S. Government was aware in obtaining international spectrum allocations at WRC-95 that included the 459.000 MHz band, this spectrum can be shared with Little LEO systems without jeopardizing current land mobile users.

API and ITA also claim there is "no demonstrated need" for additional Little Leo spectrum. This is clearly not the case. As the Commission itself notes, there is "high demand for Little LEO spectrum," which led the Commission to consider whether additional Little LEO spectrum secured at WRC-97 should be assigned to existing licensees or a third round of applicants.[70] In addition, the large number of Little LEO applicants, numerous market studies and projections, as well as the millions of dollars committed by investors to develop Little LEO systems to meet the expected market demand show that

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[68] See 47 U.S.C. § 304, which states that "No station license shall be granted by the Commission until the applicant therefore shall have waived any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise."

[69] AAR appears marginally more willing to recognize sharing as an option but claims that sharing is not feasible and criticizes current spectrum sharing studies. See AAR Comments at pp. 2-3. This is not the case. ORBCOMM and the other Little LEO applicants demonstrated throughout the ITU process, and will demonstrate yet again in the allocation process, that this spectrum can be shared without constraining the land mobile operations.

[70] NPRM at ¶ 78.

considerable demand does exist. As a result, Little LEO use of the spectrum allocated at WRC-95, including sharing the 459.000 MHz band, is necessary and feasible for the development of Little LEO systems.

VI. Conclusion

For all of the reasons articulated above, ORBCOMM urges the Commission to reject the calls for excluding Little LEO licensees from eligibility in this processing round. ORBCOMM also renews its request that the Commission reserve newly allocated spectrum for all of the second round applicants (including the first round licensees), and decline to use auctions for Little LEO satellite system licenses. ORBCOMM additionally urges the Commission to dismiss Leo One's belated and inaccurate challenge to ORBCOMM modification request to implement 9.6 kbps subscriber downlinks and re-coordinate with NOAA. Finally, ORBCOMM urges the Commission to reject the biased requests of the land mobile interest groups and Satellife. By taking these steps, the Commission will have created NVNG licensing and service rules that best serve the public interest.

Respectfully submitted,

By _____

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Dated: January 13, 1997

Engineering Certificate

I hereby certify that I am the technically qualified person responsible for the engineering information contained in this reply, that I am familiar with Part 25 of the Commission's Rules, that I have reviewed the engineering information submitted in this reply, and that it is complete and accurate to the best of my knowledge.

Dated this 13th day of January 1997.

BY: 

Paul A. Locke
V.P. Engineering and Operations (Acting)
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CERTIFICATE OF SERVICE

I, Mary-Helen Dove, hereby certify that on this 13th, day of January 1997, hereby certify that a copy of the Reply Comments, dated January 13, 1997, has been served upon the following:

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